

What Is Claimed Is:

1. A device for determining the condition of motor oil, comprising:

an arrangement configured to determine a concentration of volatile constituents of the oil.

2. The device as recited in claim 1, wherein the device is configured for use onboard in a motor vehicle.

3. The device as recited in claim 1, wherein the concentration of volatile constituents is a function of the total base number of the oil.

4. The device as recited in claim 1, wherein the arrangement includes a semiconductor gas sensor having a sensitive layer, the sensitive layer including metal oxides.

5. The device as recited in claim 4, wherein the sensitive layer includes metal oxides of at least one of Sn, W, Zn, Fe, Mo, and Cr, with admixtures of less than one percent of at least one of metals and metal oxides, selected from a group of metals consisting of Cu, Ni, Mo, Re, Zn, Cr, Al, Ce and Mn, and with admixtures of less than one percent of metals selected from a group of metals consisting of Ag, Au, Pt, and Pd.

6. The device as recited in claim 1, wherein the arrangement includes one of a surface acoustic wave (SAW) sensor, a bulk acoustic wave (BAW) sensor, or a chemiluminescence sensor.

7. The device as recited in claim 1, wherein the arrangement includes a first membrane which is impermeable for oil, but is permeable for the volatile constituents.
8. The device as recited in claim 1, wherein the volatile constituents include at least one of acetaldehyde, acetone, acetic acid, and benzaldehyde.
9. The device as recited in claim 7, wherein the arrangement has a gas compartment that is separated from an oil-containing region by the first membrane.
10. The device as recited in claim 7, wherein the first membrane is moistened by the oil.